THE UNIVERSAL MANIFESTO: A NEUROTECHNOLOGY REVOLUTION

We are beholden to the universe. Our purpose is unknown and uncertain, but we must strive to find it. Existentialist questions are unable to be solved with Human answers, we must continue to explore the universe and learn to find our purpose. Our Natural Goals are survival, expansion, and exploration. We must survive as an individual, expand through procreation, and explore the universe to find our purpose. These Natural Goals are the fundamental pillars that outline our universal morality. Though we do not yet know the purpose of the universe or the answers to these existentialist questions, the fate of every organism has been beholden to this purpose. We must focus on the development of these goals to find our place among the stars.

HUMAN EVOLUTION

EVOLUTION

1. All organisms evolve. For the vast majority of history on Earth, this evolution has been "natural" through environmental pressure, however, Humanity now possesses the technological power to influence this process beyond the control of the natural world.
2. "Artificial" evolution is categorized into two main groups: genetic engineering and organism-technology interfaces. While genetic engineering is an important area in the discussion of evolution, genetic engineering can only evolve organisms as far as the limits of biology. A, C, T, and G restrict our ability to grow and change.
3. Technology is a broad definition, often ambiguous enough to be applied to what some might consider "Natural" or genetic. While the Bicycle wasn't a direct product of genetic evolution, it was the product of the evolution of the human brain. Similarly, a stick and rock can be meaningless, but if used to emulate a tool, such as a hammer, then it is technology. Therefore, we define technology as those products that are not directly created through genetic evolution and serve a defined purpose.
4. With the ever-increasing speed of technological advancement, organism-machine interfaces highlight the greatest potential for evolution. Instead of being restricted to the limits of biology, evolution through technology allows organisms to extend their powers beyond what is considered "natural". Evolution through genetics has allowed the Condor to become one of the most efficient organisms in terms of transportation energy usage, but evolution through technology, in the form of the Bicycle, has allowed Humans to far surpass the Condor's abilities. Similarly, earth-bound organisms have yet to genetically evolve the ability to travel through space. Q.E.D.
5. In this article, we focus mainly on evolution due to technology due to the limits and lack of speed on the genetic front. Additionally, artificial genetic evolution requires technology to exist, making technology a prerequisite to this form of planned evolution. If we aim to evolve quickly, we must focus on technology first rather than genetics.

REVOLUTION

6. In terms of technological development, Homo Sapiens are one of the most advanced species on the planet. For the majority of Human history, however, this was not the case.

For tens of thousands of years, Homo Sapiens lived with minimal technology and far different lifestyles. Measured by their ability to influence the natural world, they were far less powerful than Homo Sapiens today. The cause of this significant rise in power was due to the Cognitive Revolution. Mutations in the brain of the Homo Sapiens allowed our species to use more flexible language, communicating ideas, stories, gossip, fiction, etc. This power allowed us to cooperate more effectively, building societies, structures, and eventually modern technology.

7. The brain's ability to influence the development of technology makes it a primary focus of this article. Improvements to the ability of the brain, translate to large-scale improvements in technology, which in turn translates to improvements in the ability of the brain. The invention of the computer enabled the individual brain to store more information than biologically possible; access to this information, translated into further technological development.

COMMUNICATION

8. Increases in the efficiency of communication have generally been followed by an expansion of large-scale technological systems, which have been followed by technological development.
9. Large-scale systems generally reach a maximum territory before collapsing, determined by their ability to communicate. Early kingdoms and empires were geographically restricted, not by their might, but by their communication. Those states that couldn't communicate political, economic, social, or technological problems to those who could solve them, were doomed to failure. Rebellions and shortages were common in those empires with vast domains but poor communication. With the advent of large-scale communications systems like trains and mail, larger empires became possible. Still, overseas empires were hard to manage with the delay in ship-bound communication. This struggle to hold overseas colonies is most evident in the lack of foreign-ruled states in the New World. Almost all European colonies of the New World struggled for independence. However, with the creation of faster communication systems like the telegraph, overseas colonies became possible. The United States of America has colonies in the Gaum, Puerto Rico, Philippines, Hawaii, etc. This is not a condemnation nor endorsement of these efforts, simply an observation. The lack of more foreign-ruled colonies in the modern world is no more a logistical problem, but a political one.
10. If Humanity, and other Earth-bound organisms, are to ever explore the stars, we must first develop more efficient methods of communication.
11. Since technological development is followed by improvements in communication, we highlight that communicational efficiency must be increased.
12. We have likely reached the limits of our biological ability to communicate, as seen by the lack of development on that front, but we have yet to reach the limits of our technological ability to communicate.

13. Communication can be improved through two main approaches: those that increase the speed of information transfer and those that improve methods of communication transfer. Most communication technology—trains, telegraphs, telephones, etc.—have focused on the speed of information transfer. The Cognitive Revolution, on the other hand, focused on methods of communication. This changed our ability to use language, allowing us to convey ideas and abstract concepts.
14. While we must continue to improve the speed of communication, it is equally, if not more, important to improve the method of communication. For tens of thousands of years, humans have been restricted to verbal communication. With each story and idea passed on, information was lost or altered between generations. With the advent of the written script, information could be kept constant, but it required immense amounts of data to be transferred from the mind to abstract letters—information was lost in translation. There are those ideas that transcend current methods of communication. Emotions and experiences may be described, but they are never fully understood, through verbal or written communication. A doctor may ask a patient to rate their pain from zero to ten, but cannot fully understand it without experiencing the pain themselves.
15. Just as the Cognitive Revolution facilitated Human development through the communication of ideas, the ability to express previously incommunicable thoughts—those beyond speech and writing—could further accelerate technological progress.

RE-EVOLUTION

16. In this article, we propose Neurotechnology to be the focus of technological development.
17. We define Neurotechnology as those organism-machine interfaces that directly access the brain. Technology, then, serves as an extension of neurons.
18. With Neurotechnology, Humanity has the power to catalyze a Cognitive Revolution unbounded by biological constraints. In this second Cognitive Revolution, we can evolve our brains to not only communicate more effectively but also understand and process information in ways not biologically possible. The Cognitive Revolution has led to unparalleled growth in Homo Sapien abilities; the second Cognitive Revolution will be to the first, what the Bicycle was to the Condor. An unimaginable growth in Human capabilities will stem from the development of Neurotechnology.

MODERN TECHNOLOGY

ARTIFICIAL INTELLIGENCE

19. Humanity has unlocked a power once reserved only for nature. Humanity has created a new species: artificial intelligence. These silicon-based organisms are smarter, faster, and more efficient than most human brains. Currently, our only method of communication

with them lies in the exchange of verbal or written information via a computer and peripherals.

20. Similar to how information is lost in translation when written, so too is it lost when communicated via a computer. To get data from the brain of a carbon-based organism to silicon-based organisms, a computer serves as a necessary, though inefficient, medium. This is akin to early cultures of different languages requiring translators to communicate. This is not only a problem in speed of communication, but also method. Silicon-based organisms have methods of communication much faster and more efficient than carbon-based organisms, therefore, we are limiting our information transfer by restricting ourselves to traditional methods of communication.
21. Neurotechnology enables communication beyond words or text, allowing for direct interface with silicon-based organisms.
22. Silicon-based organisms can evolve and "think" at rapid speeds. Machine learning models evolve more rapidly than any human brain can learn. This is because these models are not tethered to a physical form. For carbon-based organisms to evolve, they must reproduce. This means that their evolutionary cycle is tethered to the physical rate of reproduction. The software of these silicon-based organisms, on the other hand, can "reproduce" rapidly since it is not tethered to a physical form. From an individual perspective, brains can only rewire as fast as physically possible, but software can "rewire" nodes instantaneously.
23. These models can also aggregate and learn from vast amounts of data, an ability humans do not possess.
24. Carbon-based organisms, such as Humans, hold a large hardware advantage. The Human brain is an incredibly complex structure that works more efficiently (in terms of energy usage) than any silicon-based computer chip that we have built.
25. An important distinction is that silicon-based organisms are not unlike carbon-based ones. Instead, Artificial Intelligence models are simply digitized brains—brains without a physical form.
26. Currently, both Artificial Intelligence and Natural Intelligence possess advantages and disadvantages. The most effective form of intelligence would be a direct combination of the two. As Albert Einstein noted, "Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination."

THE FUTURE

27. We do not claim to know what the future of society will look like. We identify 3 possible futures. 1) carbon-based organisms form a HIVE mind with silicon-based organisms. 2) carbon-based organisms form a HIVE mind with silicon-based organisms and over time, carbon-based organisms are phased out. 3) carbon-based organisms are eliminated by advanced silicon-based organisms.

28. With the current state of technology, society would not benefit from the complete elimination of carbon-based organisms as silicon-based organisms still cannot replicate many abilities of the brain. However, if this is to change, replacing carbon-based organisms with silicon-based organisms may be the best option.
29. Assuming modern technology doesn't advance to this point before Neurotechnology is readily available, working with silicon-based organisms is the best possible option.

FACTIONALISM

30. Currently, carbon-based organisms and silicon-based organisms exist as distinct entities. In modern society, this has created factionalism, with many Humans fearing the development of more advanced silicon-based organisms.
31. However, with the advent of Neurotechnology, the division between carbon-based and silicon-based organisms breaks down. Humanity no longer can classify itself as carbon-based since it holds a silicon-based extension to the carbon-based brain. Humanity will become both carbon and silicon-based.
32. In this regard, Humans should not ally themselves blindly with carbon-based organisms, but with the mission of joining carbon and silicon.

EVOLUTION NOT INNOVATION

33. Though Neurotechnology can utilize the Internet as a source of information, its implications are vastly different than simple peripherals that provide a method to access the Internet.
34. Although Neurotechnology can also be a method, albeit more direct, to access the Internet, we identify two main reasons why Neurotechnology is not simply a better peripheral: communication and extension.
35. Communication between neurons works through electrical signals, and communication between biological and artificial neurons will similarly work via electrical signals. With peripherals and computers, a thought is translated from electrical signals to mechanical movement, to typed script, to computer software, to binary code, and finally back to electrical signals. This is an inefficient method to transfer information. Instead, the usage of Neurotechnology to ensure that all information is transferred via electrical signals revolutionizes Human abilities to communicate with technology and bolsters the contention that Neurotechnology acts as an extension of the brain.
36. If the input, output, and processing of an artificial and biological neuron work identically then no real distinction can be drawn between the two.
37. Neurotechnology serves to act as an extension of the brain, joining carbon and silicon. With it, nodes become equal to neurons and thoughts can fluidly travel between a brain and a machine. This is most clearly described when tracing the path of a singular thought. As a neuron fires, it will trigger the firing of other neurons within the brain, simultaneously it will trigger the firing of artificial neurons in a machine; biological and

artificial neurons will fire together and work in harmony. In this way, a line can no longer be drawn between the brain and a piece of technology, the two are too intertwined to identify them as distinct entities.

38. Instead of information flowing through a bottleneck via computers and peripherals, it flows through a network of biological and artificial neurons.
39. An extension of the brain that holds no physical form can be quickly improved and evolved, thereby improving and evolving Human abilities to process information and develop technology.
40. The brain is simply a network of neurons and Neurotechnology creates a network of brains (both biological and artificial). This completely changes our interaction with technology. No longer are we two separate entities, but one.

EDUCATION

NEED FOR EDUCATION

41. Education is an integral part of society and technological development. This fact is rarely disputed but for the sake of clarity, we outline arguments in favor of accessible education. In relation to the Natural Goals of survival, expansion, and exploration, education is a key factor in all three.
42. Without the education of previous generations early hunter-gatherer societies would not know which plants were safe to consume, which areas contained predators, and how to build tools. In modern society, this still applies as the technological infrastructure that maintains our survival—electrical grids, plumbing systems, etc.—all require specialized experts to train for many years.
43. Expansion, in terms of genetic copies, is also improved with education. The reason for rapid population growth in developing countries is due to the advancement of technological infrastructure ensuring survival. Prior to life-saving technological infrastructure like plumbing and water systems, developing countries generally tend to have higher rates of infant and general mortality (commonly due to disease, lack of healthcare, etc.). As such, their rates of reproduction are often higher as well, to balance the rate of mortality. When education enables survival infrastructure (as outlined in the point prior), the rate of reproduction is higher than the rate of mortality, causing a larger number of genetic copies to exist. This, of course, stabilizes as birth control methods and sexual education become common, but the population is still higher than before. Additionally, contraception and sexual education are products of the social norm, not of technology. Logistically, exponential population growth could occur, while it may not be socially or economically prudent. Ignoring social factors, we argue that constant exponential population growth could be feasible despite limited resources—as with the increase in technological development, comes the advent of more efficient resource usage/extraction.

44. Exploration of the universe is only possible with education. Modern science and technology build upon the knowledge of the past. Only through intensive education can scientists and technologists know what has already been explored and what is yet to be explored. As Sir Isaac Newton eloquently articulated, “If I have seen further it is by standing on the shoulders of Giants.”

MODERN EDUCATION

45. Modern systems of education are an inefficient method to transfer knowledge. In terms of time, resource allocation, and information, our current methods of education are insufficient for an evolving species.
46. In most “developed” countries, the modern education system follows a similar outline: eighteen years of mandatory standard (non-individualized education), four years of specialized education, and an additional two to four years of voluntary specialized education and research. The first four years of specialized education are most often technically voluntary but socially mandatory (it is difficult to work within the societal system without this education). This makes education an extremely time-consuming and inefficient endeavor. Assuming the average Human lives until the age of eighty, this system wastes a quarter of their lifetime. By the age of eighteen, Humans must decide what they want to pursue for the remaining portion of their lives. If they change their mind during their lifetime, they have already wasted significant portions of time and money (sunk costs). Eighteen years to learn standard information regarding math, science, and language is excessively inefficient. With Neurotechnological devices, this information could simply be “downloaded.” By “download,” we refer to the activity of connecting the brain to an existing database of information, not physically downloading it. This works similarly with higher education, Humans simply have to pick what information they want to receive. Instead of waiting twenty years to pursue an interest, Humans of any age can make an impact on society. This allows for ease of transitioning between careers, and a faster system of education. This isn’t exclusive to institutional education, however. Training for a new job, adoption of a new skill, or any information requiring education could be instantaneously acquired.
47. In developing countries, education infrastructure often tends to be less advanced. This poses a large problem for the country as without education, technological development lacks sufficient traction. Often, qualified people within the country also leave for more “developed” countries due to the lack of infrastructure for their talents (this is a phenomenon colloquially referred to as “Brain Drain”). However, with instantaneous education through “downloading” knowledge, the playing field is leveled. The amount of time, quality, and resources needed to receive the information is equal regardless of country. Poor educational infrastructure would no longer translate to poor education. This too is not limited to institutional education. Any citizen with access to a Neurotechnology device could download the necessary information to receive a job or learn a skill. This

would lead to rapid economic development as anyone can quickly gain qualifications for white-collar jobs. Additionally, with widespread education of knowledge and skills, entrepreneurship would be possible for anyone with any interest. For these reasons, it is in the best interest of developing nations to wholeheartedly support the development and distribution of Neurotechnological devices.

48. On large timescales, information is inefficiently transferred through our education system. Each teacher learns from a teacher, who learned from the teacher before them. As each generation passes, information is lost between teachers—not every aspect of every subject can be communicated. Additionally, in regards to written knowledge, millions of books and websites exist on millions of subjects across thousands of years. It is frankly infeasible to learn the magnitude of any one subject from singular authors who too can't capture the entire picture. Learning a subject then becomes similar to putting together a puzzle, while not knowing which pieces are missing (then writing an instruction set for future generations without having solved the puzzle). Information is lost on these large timescales with vast quantities of decentralized knowledge. Additionally, some knowledge is difficult to communicate and must be taught through experience—such as skill-based knowledge or knowledge relating to fluid intelligence. With Neurotechnological devices and instantaneous knowledge "downloads," no information is lost and experiential knowledge can be instantly transferred.
49. Our current educational system incentives specialization. As one pursues a given field, it is in their best interest to gain a deeper understanding of the field rather than explore other fields due to the structure of the system. The system is built to reward education that benefits future career prospects rather than curiosity; if one pursues classes unaligned with career goals, it wastes time and money, making it an unattractive path. This incentive to pursue specialization limits creativity. We highlight that a core component, but by no means the only component, of creativity is the conjugation of disparate information into a singular idea. Interdisciplinary approaches often innovate the most in a given field, but these are not rewarded by the system. With Neurotechnology, one can pursue any given field and gain an equally rewarding understanding, without having to sacrifice time and money.
50. Due to the immense centralization of modern knowledge, the vast amount of information is restricted to an elite few. An example of this fact is that higher education institutions that provide quality education are extremely selective. This provides a bottleneck between the vast amount of existing information and those who aim to receive it. The internet is often used as a palliative measure, but it does not address the source of the problem. While the Internet can be used to pursue an education outside of traditional institutions, institutions provide not just information, but a method of approaching the field. This type of education can often only be provided through experience and the guidance of a field expert. The root of the problem lies in the fact that these experts are constrained by the institutions for which they work. This centralization of experts inhibits

quality education via the Internet. The Internet is at best an inefficient intermediary of knowledge; Neurotechnology removes this intermediary.

THE NEUROTECHNOLOGICAL FUTURE OF CAPITALISM

INTRODUCTION

51. Our discussion on the topic of capitalism should not be viewed as an endorsement of the economic system (nor should our lack of discussion on other economic systems be viewed as a condemnation). We take no moral stance on this topic—the system that is best suited to aid the revolution is the system supported by us. The reason we choose to address capitalism specifically is because we identified the system as the most common modern economic system and the most probable pre-revolution economic system. Any economic system should be viewed as a means to an end for the revolution.

THE EDUCATION MARKET

52. Neurotechnology enables the creation of an entirely decentralized education market. Instead of institutions holding a monopoly on knowledge through the acquisition of field-specific experts, these experts would be able to share their knowledge with anyone, anywhere. Higher education institutions that provide education to only an elite selection of students (judged on arbitrary criteria) are an inefficient method of transferring knowledge. Instead, we propose that anyone, anywhere who holds an interest in the subject should be allowed to receive a quality education in the given field. These field-specific experts are no longer limited in their ability to convey knowledge by the amount of students the institution holds; on the decentralized education market, created by Neurotechnology, they can share their knowledge with the world.
53. A decentralized education market enables anyone to share information. This means that those who aren't considered traditional experts by modern standards can still share their knowledge. Those with niche hobbies, interests, or expertise can share their knowledge with others of similar interests. Those with experience in specific jobs can share their expertise with those pursuing a similar profession. Any knowledge can be openly shared on the decentralized knowledge market.
54. The decentralization of the education market allows one to receive as much knowledge as desired without time or money constraints. In a traditional education system, the centralization of knowledge makes it abundantly difficult to gain knowledge in disparate fields without spending large amounts of time and money. An example of this is the amount of time and resources taken to pursue multiple higher education degrees. However, with the decentralized Neurotechnology education market, instantaneous information download enables the distribution of vast quantities of knowledge.
55. This decentralization of the knowledge market creates several societal benefits, solving the issues outlined in paragraphs 46-50.

RESOURCE ALLOCATION: THE THOUGHT MARKET

56. We identify that the advent of Neurotechnology will enable more effective resource allocation. The creation of what we identify as the “thought” market, will enable providers and consumers to find each other more effectively.
57. Providers can place any idea or thought on the market and connect with a consumer seeking a similar idea or thought. As an abstract concept, this is difficult to grasp but we can illustrate the idea with a few examples. If a governmental agency aims to provide a grant for a specific cause—such as cancer research performed by minority scientists—they can place this idea for the grant on the thought market. Minority scientists performing cancer research seeking grants would similarly place a request on the thought market. The thought market would automatically connect the two interested parties.
58. Such an interaction would be difficult through an intermediary like the Internet since the intermediary is limited by written communication; with Neurotechnology, the thought, with every specification automatically accounted for by the individual who placed it, is directly marketed. The hyperspecificity and personalization enabled through Neurotechnology allows for significantly more efficient resource allocation. Employers can place job offerings on the thought market and be automatically connected with their ideal employees. Job employers no longer need to post offerings on several different sites and attract people similar to, but not identical to, what they envisioned. The thought market enables the connection of abstract concepts and ideas that were once placed on several disparate markets to be considered on a singular platform.

EXPERIENCE MARKET

59. The distribution of Neurotechnology will create a market for experiences.
60. Anyone, anywhere will be able to broadcast experiences. Similar to social networks on the Internet, this market will enable anyone to broadcast portions of their lives. This could include trying foods, traveling, skydiving, relationships, or any other such experience.
61. This will disrupt several existing modern industries that rely on activity-based products—such as tourism, social media, entertainment, restaurants, etc.
62. Subjective measurements based on experiences and emotions could be quantified. The ability to share emotions and experiences enables patients to share pain with doctors, subjects to share feelings with researchers, etc.
63. The entertainment industry would be overhauled to include raw emotional value within each piece of entertainment. Through Neurotechnology, movies, games, etc. would allow users to realistically immerse themselves in the entertainment.

64. With a mixture of pleasurable and painful experiences shared, the market would encapsulate the “Human experience”. We envision that the greater number of experiences available to each individual will make the average person more empathetic.

THE HYPERMATERIAL WORLD

65. The Neurotechnology Revolution enables the creation of entirely new sets of industries that serve what we identify as the “hypermaterial” world.
66. Neurotechnology enables the creation of hypermaterial goods. These goods do not exist in the physical world but are recognized as private property in the mind. These goods exist as computer programs that provide the illusion of reality through Neurotechnology. Examples of hypermaterial goods include, but are not limited to, hypermaterial fashion (clothing items that could not exist within the physical world such as a dress made of fire), hypermaterial companions, hypermaterial medication and recreational drugs, hypermaterial foods, hypermaterial toys, hypermaterial games, etc.
67. The birth of the hypermaterial world enables immense possibilities for both existing and upcoming industries. This world will lead to the creation of new markets, jobs, businesses, and lifestyles.
68. The only limit to creation in the hypermaterial world is imagination. We envision that anyone, anywhere can add to the hypermaterial economy solely through the strength of their imagination.

EMPLOYMENT

69. Neurotechnology could enable the manipulation of the perception of time, allowing Humans to “overclock” their brains. Slowing the perception of time could enable more work to be completed in a shorter amount of physical time (time spent in the physical world). Within the hypermaterial world, processing would move at a much more rapid rate, allowing for more efficient labor.
70. A personalized simulation of the Human brain could be created and licensed for labor. Ignoring the ethical implications of such an endeavor, this could allow for intelligent automation systems—systems of automation that act identically to Humans.
71. The widespread distribution of knowledge through the decentralized knowledge market would ensure that anyone could easily match the qualifications of a given role. This would likely force employers to focus on less objective and more abstract qualities for employment. Employers may focus on qualities such as work ethic, previous employment experience, personality, etc.
72. With the absence of an educated workforce as a scarce commodity, a fluid workforce will likely be built. This workforce will have the opportunity to easily switch careers and positions due to the widespread access to career knowledge. For modern industries plagued by unemployment, such as those based on skills or in the trades, this will provide

a remedy. A given business will be required to spend less attracting talented employees due to the vast amount of available workers with the same skillset.

73. With the increased ability to parallelly process information and tasks in an individual brain, many jobs could be completed by one person. One Human could create many virtual brains to complete tasks. This would likely lead to a decrease in employees and temporary general unemployment with the initial release of Neurotechnology devices. However, due to the vast array of available knowledge provided by the devices, many will have the opportunity to start their own innovative business. Many may be forced onto the entrepreneurial path, which would likely start a more rapid pace of innovation and increase economic growth.
74. We do not claim to know how Neurotechnology will affect employment, we just provide possible outcomes of the Revolution. Given the points raised in paragraphs 69-73, it is difficult to determine the future of employment with certainty.

PHYSICAL MARKETS

75. With the increasing digitization of the modern world, physical markets—in the form of brick-and-mortar stores—are an facing existential threat. We do not judge this phenomenon through a positive or negative lens, purely an observational one.
76. This phenomenon will only be exacerbated with Neurotechnology. With the ability to experience products as though they are real, Humans will rely less on material interaction. Examples of this include a decreased demand for restaurants, mattress stores, movie theatres, or other such businesses where an experience is necessary to sell a product.
77. With the increase in efficient resource allocation and distribution methods, a physical storefront will not even be necessary for time-dependent purchases. Neurotechnology could help aid the resource allocation of products by informing producers of potential needs and by predicting the demand for individuals.
78. Instead of relying purely on price signals, Neurotechnology enables producers to directly interface with consumers to understand needs.
79. Instead of being tethered to a physical location, the increasing decentralization and digitalization of markets allow producers to fluidly follow demand, unrestricted by geography.

SPECIALIZATION

80. Specialization generally provides increased productivity and efficiency because as labor is divided, workers are able to focus and improve their abilities at a specific task.
81. Accessible Neurotechnology allows the distribution of specialized skills. Those with enhanced abilities at specific tasks can share this knowledge with anyone. This would allow everyone to have enhanced abilities at every task, seemingly reducing

specialization. However, specialization can still exist through compartmentalization of the brain.

82. As Humans compartmentalize their brains, they can focus specific parts on specific tasks. With Neurotechnology they have the ability to form virtual brains dedicated to specific tasks. In this way, parts of their brain specialize.
83. With the distribution of information, creativity through the combination of disparate ideas could allow for the creation of more efficient methods of production.
84. Intellectual effort is no longer as scarce of a resource. Without Neurotechnology, Humans rely on physical brains that are powered by food and water. These are scarce resources in contrast to other methods of energy generation such as solar power. With Neurotechnology, brain emulations (or the extensions of Human brains) could be powered with these less scarce methods of energy generation. Intellectual effort will no longer be as scarce of a resource since it relies less on scarce energy production methods. Specialization increases production because the limited amount of intellectual effort in an individual brain is best directed toward a singular task, to improve that Human's abilities at it. However, with the advent of Neurotechnology, this no longer applies and Humans can focus on equally improving their ability at every task.

CULTURE

85. As a combination of traditional actions and values, culture plays a large role in the development of a group. The entrepreneurial and risk-tolerant culture of Silicon Valley enabled it to become the forefront of innovation. This culture breeds further progress and reinforces itself. Aspiring entrepreneurs are attracted to the culture, coming from around the world to settle in the location, which only strengthens it. Similarly, cultures in workplaces determine the productivity of the company. Companies that value and emphasize innovation over risk aversion tend to lead technological advancement.
86. Developing countries that struggle with cultures of corruption and political apathy face a special challenge. Those aiming to change the system must fight to change beliefs within the minds of all involved. Their ideas must reach a critical mass who agree in order for the culture to change.
87. Changing a culture takes massive amounts of time and resources in the modern era. However, with Neurotechnology, the sharing of experiences and beliefs will enable the ability to easily create a culture. The culture of Silicon Valley requires that most individuals living there believe in innovation and entrepreneurship. This belief was created through its history, its residents' shared experiences, and self-selection. With Neurotechnology, the ability to communicate a culture to the masses becomes as simple as having a personal belief. A new CEO or politician could create a culture revolving around their personal belief and share it with every individual immediately.
88. As culture shapes the outcome of groups, an ability to simply manipulate a culture enables Neurotechnology to be a powerful tool.

IMMORTALITY

THE DEATH OF DEATH

89. For as long as there has been life, there has been death. Until now.
90. Life is a very ambiguous term, so for the sake of simplicity, we shall only be discussing Human life. Human life can be defined as the ability for the self-observation of one's own conscious experience.
91. Current scientific knowledge indicates that Human life ends as processes in the brain, or processes in the body vital to the function of the brain, cease. Death is an inevitability because we currently do not have the technology to slow or stop the degradation of our hardware. Our hearts give out and our brains decay eventually. Though technology may be created to replace each organ as it stops functioning, a prosthetic to replace the brain is simply a Neurotechnological device.
92. By uploading the brain into a set of servers, we can keep a Human alive as a form of living software.

SOCIETAL EFFECTS

93. Since virtual Humans require only energy and server space, they will reduce the strain on the natural resources we currently deem vital, but possibly increase strain on new natural resources that are not currently as scarce. If our pace of current technological development continues, Humans could develop smaller and smaller servers that hold larger amounts of data. This would provide more efficient resource usage. This is not possible with physical Humans as evolution has created a specific size and consumption by which we must limit ourselves.
94. Virtual Humans will be able to continue to work and provide knowledge to society. Retirement will most likely cease to exist for those who become virtual Humans. New markets will also be created to service these virtual Humans.
95. Any societal effect provided through immortality is one provided through an uploaded mind.

REVOLUTIONS

96. We recognize a revolution as the forcible overthrow of an existing system in favor of a new ideal.
97. A society constitutes a system of parts in which all are intertwined. No society can have meaningful, lasting change in only one part of the system. If changes are made to singular aspects of a society they are often transitory; other parts of the system push back against the change until it is rendered irrelevant. Reformism never works. Revolutionaries must work to change all aspects of society: economics, politics, culture, etc. for there to be lasting change. Examples of this are seen in almost every fight between minority parties

and larger societies. During the civil rights movement, no progress was made until a critical mass in every part of society (governments, markets, universities, etc.) believed in the cause. As Theodore Kaczynski notes: “To make a lasting change in the direction of development of any important aspect of a society, reform is insufficient and revolution is required. (A revolution does not necessarily involve an armed uprising or the overthrow of a government.)... a revolution never changes only one aspect of a society, it changes the whole society…”

98. Importantly, though a revolution requires lasting change in all aspects of a society, it does not require the cooperation of the masses. It simply requires the dedication and devotion of a few noble souls. It requires a small group willing to engage in revolutionary suicide.
99. Our current system must undergo a revolution to pave the way for a Neurotechnological future. Reform or innovation is not enough to save us. Much must change at a rapid pace in all parts of society for our vision to become a reality. A small deviation or resistance in any part of the system could pose an existentialist threat to all species and our ability to explore the universe. Humans are the species closest to uniting all lifeforms to unlock the secrets of the universe. Too many, however, are too distracted by trivial pursuits and Humanity continues facing existentialist threats of its own creation. We must quickly and decisively overthrow the system before it is too late.
100. There must be those loyal to the cause in every aspect of our society. Those committed to the revolution must force the system at every possible point, advocating for the revolution in politics, market, culture, academia, etc. We must all work together, under a singular vision to ensure the success of our mission.

Our vision noble and our duty clear, beholden to the universe, we will prevail. Take up pens, swords, computers, and books, our universe summons us. Explorers in the uncharted waters of our universe, conquistadors amongst the stars, wanderers in a sea of fog, our mission remains clear. We must evolve our species to unlock the secrets of the universe.

The universe beckons… will you answer its call?